DETAILED ACTION

1. Acknowledgement is made of the amendment received on 10/02/2010.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephonic interview with George D. Liu March 23, 2010.

The claims in the application have been amended as follows:

In claims:

(1) Replace claim 1 with:

In a receiver of a communication system, a method for reducing noise in a transformed signal, said transformed signal having a plurality of signal components on different subcarriers which are orthogonal to each other, said method comprising the steps of:

receiving the transformed signal by a detector of said communication system;

processing the plurality of signal components of said received transformed signal by a plurality of decision modules coupled to said detector, wherein said processing step comprises:

identifying one or more signal components having one or more smallest channel coefficients based upon a channel estimate of said plurality of signal components;

reconstructing a predetermined number of times, by a reconstructing module coupled to outputs of said plurality of decision modules, said identified one or more signal components to thereby reduce noise in said identified one or more components;

wherein said reconstructing further comprises an estimated signal from a reconstructed transformed signal at an input of said detector and based upon said channel estimate of said plurality of signal components; and

replacing said identified one or more signal components having one or more smallest channel coefficients for reconstruction in said received transformed signal with the reconstructed one or more signal components to provide a new transformed signal having one or more reconstructed signal components with reduced noise;

thereby outputting a new transformed signal with reduced noise.

(2) Cancel claim 2.

(3) Replace claim 3 with:

The method as claimed in claim 1, wherein said processing step further comprises the step of decision processing said estimated signal using the plurality of decision modules.

(4) Replace claim 6 with:

The method as claimed in claim 1, wherein said reconstructing step further comprises the step of providing another estimated signal from said reconstructed transformed signal at said input of said detector and based upon said channel estimate.

(5) Replace claim 15 with:

The method as claimed in claim 1, wherein said reconstructing step further comprises the step of simultaneously reconstructing two or more of said one or more signal components identified.

(6) Replace claim 17 with:

A receiver for reducing noise in a transformed signal, said transformed signal having a plurality of signal components on different subcarriers which are orthogonal to each other, said receiver comprising:

a signal reconstructing section having:

a detector for detecting said transformed signal;

a plurality of decision modules, each of said plurality of decision modules having an input coupled to output of said detector; and

a reconstructing module having one or more inputs, said one or more inputs being respectively coupled to output of said plurality of decision modules,

wherein said plurality of decision modules are adapted to identify one or more signal components having one or more smallest channel coefficients based upon a channel estimate of said plurality of signal components;

wherein said identified one or more signal components are reconstructed a predetermined number of times to thereby reduce noise;

wherein said reconstructing further comprises an estimated signal from a reconstructed transformed signal at an input of said detector and based upon said channel estimate of said plurality of signal components; and

wherein the identified one or more signal components having one or more smallest channel coefficients for reconstruction are replaced with the reconstructed one or more signal components to thereby form a new transformed signal with reduced noise.

(7) Replace claim 18 with:

The receiver as claimed in claim 17, wherein each of said plurality of decision modules comprises one or more hard decision modules.

(8) Replace claim 19 with:

The receiver as claimed in claim 17, wherein each of said plurality of decision modules further comprises one or more soft decision modules.

(9) Replace claim 21 with:

The receiver as claimed in claim 17, wherein said reconstructing module is adapted to perform simultaneous reconstruction of two or more of said one or more signal components identified.

(10) Replace claim 22 with:

The receiver as claimed in claim 17, wherein said reconstructing module is adapted to perform reconstruction of said one or more signal components identified one at a time.

(11) Replace claim 23 with:

A communication system comprising:

a signal reconstructing section for reducing noise in a transformed signal, said transformed signal having a plurality of signal components on

different subcarriers which are orthogonal to each other, said signal reconstructing section having:

a detector for detecting said transformed signal;

a plurality of decision modules, each of said plurality of decision modules having an input coupled to output of said detector; and

a reconstructing module having one or more inputs, said one or more inputs being respectively coupled to output of said plurality of decision modules,

wherein said plurality of decision modules are adapted to identify one or more signal components having one or more smallest channel coefficients based upon a channel estimate of said plurality of signal components;

wherein said identified one or more signal components are reconstructed a predetermined number of times to thereby reduce noise;

wherein said reconstructing further comprises an estimated signal from a reconstructed transformed signal at an input of said detector and based upon said channel estimate of said plurality of signal components; and

wherein the identified one or more signal components having one or more smallest channel coefficients for reconstruction are replaced with the reconstructed one or more signal components to thereby form a new transformed signal with reduced noise.

(12) Replace claim 24 with:

The communication system as claimed in claim 23, wherein each of said plurality of decision modules comprises one or more hard decision modules.

(13) Replace claim 25 with:

The communication system as claimed in claim 23, wherein each of said plurality of decision modules further comprises one or more soft decision modules.

(14) Replace claim 27 with:

The communication system as claimed in claim 23, wherein said reconstructing module is adapted to perform simultaneous reconstruction of two or more of said one or more signal components identified.

(15) Replace claim 28 with:

The communication system as claimed in claim 23, wherein said reconstructing module is adapted to perform reconstruction of said one or more signal components identified one at a time.

(16) Replace claim 29 with:

A signal reconstructing section for a receiver to reduce noise in a transformed signal, said transformed signal having a plurality of signal

components on different subcarriers which are orthogonal to each other, said signal reconstructing section comprising:

a detector for detecting said transformed signal;

a plurality of decision modules, each of said plurality of decision modules having an input coupled to output of said detector; and

a reconstructing module having one or more inputs, said one or more inputs being respectively coupled to output of said plurality of decision modules,

wherein said plurality of decision modules are adapted to identify one or more signal components having one or more smallest channel coefficients based upon a channel estimate of said plurality of signal components;

wherein said identified one or more signal components are reconstructed a predetermined number of times to thereby reduce noise;

wherein said reconstructing further comprises an estimated signal from a reconstructed transformed signal at an input of said detector and based upon said channel estimate of said plurality of signal components; and

wherein the identified one or more signal components having one or more smallest channel coefficients for reconstruction are replaced with the reconstructed one or

more signal components to thereby form a new transformed signal with reduced noise.

(17) Replace claim 30 with:

The signal reconstructing section as claimed in claim 29, wherein each of said plurality of decision modules comprises one or more hard decision modules.

(18) Replace claim 31 with:

The signal reconstructing section as claimed in claim 29, wherein each of said plurality of decision modules further comprises one or more soft decision modules.

(19) Replace claim 33 with:

The signal reconstructing section as claimed in claim 29, wherein said reconstructing module is adapted to perform simultaneous reconstruction of two or more of said one or more signal components identified.

(20) Replace claim 34 with:

The signal reconstructing section as claimed in claim 29, wherein said reconstructing module is adapted to perform reconstruction of said one or more signal components identified one at a time.

Allowable Subject Matter

3. Claims 1 and 3-34 are allowed.

4. The following is a statement of reasons for allowable subject matter:

The prior art of record, Huang et al. does not teach or suggest reconstructing a predetermined number of times, by a reconstructing module coupled to outputs of said plurality of decision modules, said identified one or more signal components to thereby reduce noise in said identified one or more components; wherein said reconstructing further comprises an estimated signal from a reconstructed transformed signal at an input of said detector and based upon said channel estimate of said plurality of signal components; and replacing said identified one or more signal components having one or more smallest channel coefficients for reconstruction in said received transformed signal with the reconstructed one or more signal components to provide a new transformed signal having one or more reconstructed signal components with reduced noise; thereby outputting the new transformed signal with reduced noise.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kabir A. Timory whose telephone number is 571-270-1674. The examiner can normally be reached on 6:30 AM - 3:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kabir A Timory/

Examiner, Art Unit 2611

/Shuwang Liu/

Supervisory Patent Examiner, Art Unit 2611